

CONSUMABLE STAPLE REFILL

Roberto Obregon
Av. Naciones Unidas 6111-55
Parque la Castellana
Guadalajara, Jalisco 45110
Mexico
Citizenship: Mexico

Marina M. Talavera
Araceli Souza #559-301
Col. Paseos del Sol
Guadalajara, Jalisco 45090
Mexico
Citizenship: Mexico

TECHNICAL FIELD

The present invention relates in general to the packaging of consumable products for use in machines and in particular to the packaging of fasteners used by office equipment.

BACKGROUND

Automated office devices, such as copiers, commonly employ machine components which perform helpful functions in addition to a main task, such as, for instance, automatically stapling a number of copied sheets together. Accordingly, the provision of economical, reliable, and efficient mechanisms for performing such subsidiary functions, and of consumable components used by such mechanisms, is generally desirable in order to provide a beneficial service to the machine as a whole. One such mechanism is an automatic stapler.

One prior art approach to providing staples in a manner suitable for automatic stapling within a copy machine, or copier, is the insertion of container of staples which is placed within the copier so as to make the individual staples available to automatic stapling equipment within the copier. Generally, upon consuming all the staples within a container, the container is removed and disposed of. The discarding of used staple containers in this manner generally causes the expense associated with the production and disposal of one staple container to be incurred every time one container's worth of staples is consumed by the copier. Moreover, an environmental cost is experienced, since a considerable number of containers will either be discarded completely, or recycled, over the operating life of a copy machine.

An alternative approach involves using plates of staple wire which are stacked and bound using a paper tie. Ideally, a human operator first securely inserts the bound stack of staple wire plates into a copier and then removes the paper tie to allow the plates to be moved with respect to each other within the copier to enable automatic stapling to occur. However, this approach is subject to a human operator occasionally forgetting to remove the paper tie, thereby disabling the advancement of staple wire plates for automatic stapling. Another problem experienced with this approach is that some human operators elect to remove the paper tie prior to inserting the vertically stacked staple wire plates into a copier which may

cause the plates fall into disarray. Thereafter, it can be quite difficult to reorder the plates so as to properly position and secure them within a copy machine staple refill contained.

Therefore, it is a problem in the art that ties used to bind staple wire plates together may disable operation of an automatic stapling operation if not properly removed from a copy machine prior to initiating operation thereof.

It is a further problem in the art that prematurely removing a tie binding staple wire plates together may hinder the proper placement of such staple wire plates in a copy machine.

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